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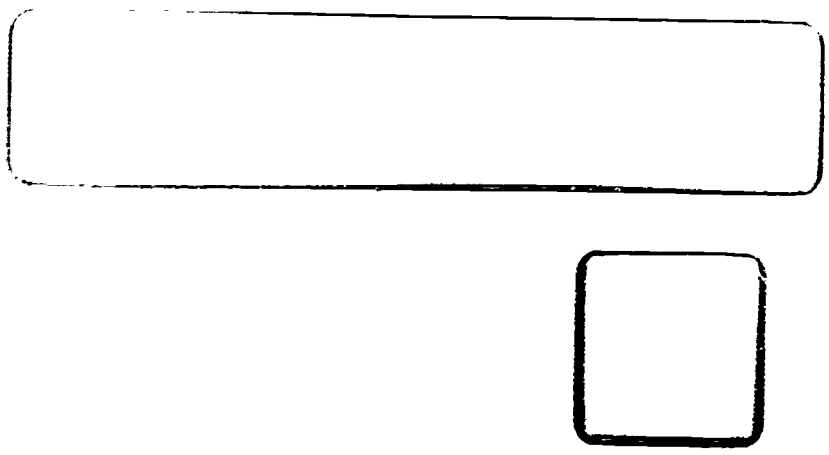
ABSTRACT

This is a report on a project to develop teacher-leaders to assist in the installation of Science - A Process Approach in schools of diverse characteristics in New York and Pennsylvania. The function of such a teacher-leader would be to use his competence and training to assist his peers in the institutionalizing of Science - A Process Approach. The teacher-leader would serve as a peer-staff member who is of immediate continuing support to fellow teachers. In conjunction with the introduction of a teacher-leader into the schools used in the study, a survey was taken of the expectations for the teacher-leader role as held by various professionals involved in this project. These included four groupings: pilot school teachers, teacher-leader trainees, science consultants, and program coordinators. A questionnaire, which briefly described 15 probable tasks for the teacher-leader role, was administered to representative samplings of the five groups involved. The respondents were asked to rank the 15 tasks from most important to least important in the teacher-leader role. Findings show clearly that the four respondent groups hold differing judgments as to the relative importance of proposed teacher-leader tasks. (BR)

The Role of the Teacher-Leader in Curriculum Installation



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Program Report 104

The Role of the Teacher-Leader in Curriculum Installation

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A RATIONALE FOR TEACHER-LEADERS: THE PEER AGENTS OF CHANGE

Change is an ever-present word in educational circles. The term echoes from scholarly journals, professional presentations, and the media. Schools must change to meet the needs of an everchanging society. Current social conditions put pressure on the schools already charged with preparing the child to meet unknown future changes.

How this needed change will be brought about remains a big question. Financial support from the federal government provides opportunities for change but places corresponding responsibilities on the educational system for developing it. Private industry has a growing involvement in the design and development of educational materials. Institutions of higher learning concerned with teacher education are undergoing reappraisal and revitalization. New educational groups are forming which could drastically change the structure of our schools. The general public is demonstrating an increasingly critical and interested attitude toward education.

From listening to what many educators say, one might assume that contemporary classrooms are new exemplars of change: of individualized instruction, of process rather

than fact teaching, and of equalized opportunities leading to the pursuit of excellence for all. One would expect a dynamic growing experience for both pupil and teacher wherein learners tackle the problems and issues of today and predict the issues of tomorrow and their likely solutions.

However, this is not the actual situation. Heathers(1) tells us what one typically finds:

> It would be... accurate to describe them [today's classrooms] as teacher-centered, group-centered and fact-centered. In most classrooms, the teacher rather than the child is the central figure. Most frequently, the teacher works with groups rather than with individual children. In most of his time at school the child is engaged in acquiring information rather than in learning to understand and use ideas.

Or, in the words of John Goodlad(2):

> ...the much-heralded pedagogical revolution is still largely in the cumulo-nimbus clouds of educational reform that roll back and forth across this vast and varied land. These clouds have not yet enveloped the millions of teachers who make up the working force of our elementary and secondary schools to anything like the high degree claimed by many innovators and popular magazines.

Why is there this discrepancy between what is considered desirable and what is done? The realization of the need for change and the selection of an appropriate solution usually are processes engaged in by administrators at the top of the educational hierarchy. Traditionally, the superintendent of schools in a local school system has been the

individual associated with the introduction of an innovation for adoption(3). The influence of the principal in encouraging innovation is well-documented(4): ..."unless he [the administrator] gives it [an innovation] his attention and actively promotes its use, it will not come into being."(5)

But is this purely administrative action sufficient? The administrator who subscribes to an innovation is not the individual who has to act in a different way, change his values, and shift his attitudes. Rather, it is the classroom teacher who is asked to make such basic changes; and it is only such changes in the teacher which will affect what happens in the classroom--which will make the needed changes in our schools. Therefore, the focal point for the institution of change must be the teacher. She must be the local agent of change whose job it is to facilitate the innovation in day-to-day planning, teaching, and pupil evaluation.

Harris(6) has said:

> The schools do not have recognized change agents. Supervisors have not been perceived as change agents in most school systems and have rarely functioned as such. A competent, recognized change agent group needs to be developed whenever change is to be forthcoming on a planned basis.

It is imperative then that a new type of change agent be developed. People are needed in our schools who can be recognized as leaders in innovation, but who are neither outside personnel nor administrators--classroom teachers who can initiate change, and who can demonstrate the need for, the value of, and the techniques of change to their fellow teachers.

This report describes the utilization of specially-trained teachers as agents of change, operating within a designated innovative area. The Eastern Regional Institute for Education believes that much talent and leadership is latent among professional classroom teachers, but most competent teachers have not functioned in the past as agents of change. As Brickell(7) describes the situation:

> ...it must be remembered that the teacher is not an independent professional...He is instead a member of the staff of a stable institution. His behavior reflects his position. As long as he remains inside the classroom he exerts almost total control. The moment he steps outside it, however, as proposing a new type of instructional program would require him to do, he comes face to face with a group of his peers. Any semblance of control evaporates; he has no more authority than other members of the group, some of whom will not welcome his proposals.

However, there seems to be a strong possibility that a teacher could become an agent of change if the innovation were selected and endorsed by the administration and the

staff. The function of such a teacher-leader would be to use his acknowledged competence and training to assist his peers in the institutionalizing of an innovation.

What would be the advantages of training such personnel and freeing them from a portion of their teaching duties? Such teacher-leaders would remain within the schools, accessible to colleagues every day. They would be precisely where they were needed. They would be in a position to adapt the innovation to their particular school or school system. They would be able to facilitate on-going adaption so that change does not become merely a new status-quo: "We innovated last year" is not a useful long-term view(8). Their competence in a particular area could serve as a resource for general supervisors and be useful in the coordination and inter-relation of the total school program. As colleagues of the teachers, they would be in a non-evaluative, non-threatening position, and, therefore, would be called upon with more freedom. Their skill, competence, knowledge, and enthusiasm would be recognized--a rare occurence in our present typical system of staffing. Their presence would foster professional communication, something which is greatly impeded by the traditional pattern of isolation, the self-contained classroom.

Howsam(9) has stated that "one of the most promising long-term strategies is to invest more and more in the professional development of individual teachers." Well-trained teacher-leaders, committed and enthusiastic, might be the key to introducing and sustaining new curricula in our schools. ERIE has been concerned with training and utilizing such teacher-leaders to assist educational change.

THE ERIE TEACHER-LEADER TRAINING PROGRAM

Since the spring of 1967, ERIE has been concerned with the study of change--specifically, with the introduction and acceptance in diverse schools of Science--A Process Approach, an innovative, process-oriented elementary school science curriculum. Schools in 20 districts cooperated in this study. As installation progressed, the ERIE consultants, who visited the schools bi-weekly, became clearly aware of the difficulties of implementing change as outside personnel. It became apparent that the assistance of local staff was necessary to nurture the program each day and to adapt it to the needs of a particular school.

This concern led the staff of ERIE to conceive of training local teaching personnel to serve as peer agents of change for Science--A Process Approach. These teacher-leaders would assist the ERIE consultant during installation. Such a person could informally assist other teachers in many ways--perhaps putting together a balance scale for a mechanically inept colleague, or seeing that materials received but not yet distributed by the administration be properly given out, or even demonstrating a lesson segment she felt had gone well in her own class. The teacher-leaders would maintain their positions as classroom teachers; thus, their influence would be exerted horizontally,

not verti ally. As English(10) says, "Excellent classroom teachers may influence the decision-making process at many levels within the organization without having to become administrators."

Further, ERIE's assistance was to be only temporary. Once the new curriculum was installed and operating, the local school system would be responsible for its continued existence; it would be no longer an innovation, no longer an ERIE responsibility. These trained teacher-leaders would then remain as competent supportive personnel for Science--A Process Approach after external assistance had been withdrawn.

The Selection of Teacher-Leaders

Superintendents and principals of the pilot schools were contacted as to their interest in the proposed teacher-leader program. ERIE agreed to provide training room and board at Ithaca College for a three-week workshop, and a modest stipend to each teacher-leader for a full year of cooperation. Each school district was to assume transportation expenses to this workshop and to a maximum of two follow-up meetings during the 1968-69 school year; each district would also pay a substitute for the teacher-leader while she attended these follow-up meetings. School districts further agreed to provide a minimum of five hours

of released time per week so teachers selected could function as teacher-leaders. Fourteen pilot school districts expressed an interest in participating in the program.

Next, the principals and faculties of the cooperating schools were asked to nominate prospective teacher-leaders. A letter to each teacher in the pilot schools suggested the following description be used in making nominations:

> This individual, while teaching in the project for the 1967-68 school year, should have expressed enthusiasm for working with children in a process curriculum and should have demonstrated steady and enthusiastic accomplishment in Science--A Process Approach. You should respect this teacher as a professional colleague and friend, and anticipate that you could work with this prospective teacher-leader with personal satisfaction.

When nominations had been received, a selection committee composed of the program director and three staff associates chose the teacher-leader from each district. Additional criteria used in this selection stipulated that each candidate: 1) be a fulltime teacher, 2) have experience as a Science--A Process Approach pilot teacher during the 1967-68 school year, 3) express willingness to serve as a teacher-leader, 4) have a teaching record of at least 10 Science--A Process Approach exercises during the 1967-68 school year, 5) be nominated by teachers, 6) be nominated by her principal, 7) be recommended by the ERIE pilot school consultant, 8) have a minimum of 2 years' teaching

experience. When final selection of the group was made, 16 teachers from 14 districts were offered training; 9 teachers from 8 districts accepted.

The Training of Teacher-Leaders

A three week teacher leader training program was held in August, 1968. During the first two weeks, participants received in-depth instruction on the processes involved in Science--A Process Approach, and reviewed the methods and materials used in Grades K-4. Sessions were held on: 1) the concept of the teacher-leader, 2) how to function as an agent of educational change, 3) the Flanders analysis of classroom interaction, 4) the process-learning theories of Piaget and Gagné, and 5) other innovative elementary school science programs. Time was provided for the teaching and observation of Science--A Process Approach lessons with local elementary school pupils.

During the final week of the program, the teacher-leaders became an integral part of an ERIE workshop which trained over 500 teachers to use Science--A Process Approach. This chance to instruct others was a real practicum experience for the teacher-leader.

THE TEACHER-LEADER ROLE: A PRIORI EXPECTATIONS

In conjunction with the training program discussed in the previous section, the ERIE staff decided to survey the expectations for the teacher-leader role as held by the various professionals involved in the project. These included five groupings of professionals: pilot school teachers, teacher-leader trainees, pilot school administrators, ERIE science consultants, and ERIE program coordinators.

Getzels(11) has stated that role conflicts occur whenever an individual must conform simultaneously to a number of expectations which are contradictory or inconsistent. ERIE realized that role conflicts might occur in the new position if, for example, teacher-leaders were expected by administrators to observe and evaluate teaching within the classroom against the wishes of teachers.

Early awareness of apparent discrepancies of role preconceptions among the five involved groups was important to ERIE staff in their efforts to shape the teacher-leader position into a viable role and to provide effective training and support for prospective teacher-leaders. Tasks upon which there was substantial agreement, it was reasoned, should be assigned to the teacher-leader. In this way, role conflicts would be minimized and satisfaction with the viability of the new role would be maximized.

The Questionnaire

A questionnaire was developed which described briefly 15 probable tasks for the teacher-leader role. Listed below, these tasks do not include all possible responsibilities of the teacher-leader. They do represent, however, task expectations related to the specific innovation, Science--A Process Approach, in the teacher-leader project.

The 15 teacher-leader tasks listed in the questionnaire were:

1. Assist teachers in interpretation of printed materials of program.
2. Assist teachers in construction and utilization of materials used in program provided in kit.
3. Assist teachers in location and purchase of additional materials needed in program and not included in kits.
4. Assist in the evaluation of individual pupil learnings.
5. Assist teachers with the organizational arrangements needed to install more effectively the curriculum, e.g., grouping of pupils within the classroom.
6. Assist teachers to secure and select pertinent audio-visual materials to enhance the curriculum materials.
7. Provide orientation for new instructional staff in the use of the innovative curriculum.
8. Teach demonstration lessons for regular classroom teachers.
9. Provide leadership for inservice workshops, and/or conferences, for persons (from own or other school district) interested in the innovative curriculum.

10. Provide time for intervisitations by taking over regular classroom teacher's responsibilities so this teacher may visit other classes (in or outside own school district) to observe innovative curriculum being taught.

11. Foster improved school-community relations through such endeavors as speaking at PTA, getting information on curriculum to mass media resources, etc.

12. Provide feedback to sponsoring agencies on problems arising with use of curriculum.

13. Evaluate instructional performance of teachers working with innovative curriculum.

14. Serve as the "sounding board" for teachers wishing to express positive or negative comments on innovative curriculum.

15. Observe classroom teachers using innovative curriculum and provide counsel.

The respondent was asked to judge the appropriateness of each task for the teacher-leader. His response was indicated by first placing each of the 15 tasks into one of three categories: (1) most important, (2) average importance, (3) least important. He then ranked the tasks within each of the three categories. The resulting responses provided for a ranking of the 15 tasks by each respondent, 1 being the item ranked first by him in the "most important" category, 15 being the item ranked last in the "least important."

The Respondents

The questionnaire was presented in the summer of 1968 to: 132 pilot school teachers at the Science--A Process Approach training workshop, 10 prospective teacher-leaders, 20 principals and administrators of the pilot schools, 4 ERIE staff consultants for Science--A Process Approach, and 6 ERIE staff program coordinators. It should be noted that all teacher-leaders, administrators, and ERIE staff had experience working with Science--A Process Approach; the teachers in the workshop had previous training, but no experience.

Results

Table 1 shows the median ranking, under each of five respondent groups, of the 15 tasks listed in the questionnaire. Also given under each group is the rank of the median ranking of the 15 tasks. For example, the median ranking of the teachers' responses for Task 1 is 3.50. Since 3.50 is the lowest median rank value under the teachers group, it is assigned a "Rank of Median" value of 1. This means that the teachers group sees Task 1 as the most important among the 15 listed. Therefore, this task is ranked 1 in the "Rank of Median" column for teachers. Similarly, median scores and ranking of median scores are recorded for the 15 tasks under the teacher-leader group, the administrators group, the ERIE consultant group, and the ERIE program coordinators group.

TABLE 1

MEDIAN SCORES AND RANK ORDER OF MEDIAN SCORES
BY TASK FOR EACH RESPONDENT GROUP

	Teachers N=132		Teacher-Leaders N=10		Administrators N=20		ERIE Consultants N=4		ERIE Prog. Coord. N=6	
Task	Median	Rank of Median	Median	Rank of Median	Median	Rank of Median	Median	Rank of Median	Median	Rank of Median
1	3.50	1	3.0	2.5	6.0	4.0	1.0	1.0	9.5	10.5
2	6.73	3	6.5	7.0	7.5	7.0	2.5	2.0	7.0	6.0
3	7.17	5	9.5	11.0	9.5	10.5	7.5	8.0	9.0	9.0
4	11.70	14	12.5	13.5	11.5	14.0	11.5	11.0	10.5	12.5
5	8.63	10	9.0	9.5	8.0	8.0	3.5	3.0	5.0	4.0
6	7.43	7	8.0	8.0	10.5	12.5	9.5	10.0	8.0	8.0
7	3.68	2	2.5	1.0	4.0	1.0	5.0	4.5	2.5	1.5
8	7.70	9	6.0	6.0	5.5	2.5	6.5	7.0	3.5	3.0
9	7.35	6	9.0	9.5	5.5	2.5	12.0	12.0	9.5	10.5
10	8.96	12	13.5	15.0	10.5	12.5	13.0	13.0	6.5	5.0
11	9.62	13	11.0	12.0	8.5	8.0	9.0	9.0	13.0	14.0
12	6.83	4	4.0	4.0	6.5	5.0	14.0	14.5	10.5	12.5
13	12.61	15	12.5	13.5	14.0	15.0	14.0	14.5	13.5	15.0
14	7.64	8	5.0	5.0	9.5	10.5	5.0	4.5	7.5	7.0
15	8.81	11	3.0	2.5	7.0	6.0	5.5	6.0	2.5	1.5

Discussion

While the data in Table 1 above do not provide the basis for a detailed analysis, they do indicate quite clearly instances in which the five respondent groups hold differing judgments as to the relative importance of proposed teacher-leader tasks. In this way, the results signal points of possible role conflict in the teacher-leader position.

Outstanding differences in the rank order of the median scores among the five respondent groups are noted below. For discussion purposes, the "Rank of Median" scores are divided into three categories as follows:

1- 5 "most important"

6-10 "average importance"

11-15 "least important"

Task 1: Assist teachers in interpretation of printed materials of program

Based on the 1-5 range (rank of median scores) for the "most important" tasks, all respondent groups with the exception of ERIE program coordinators judged Task 1 as a "most important" task. In contrast to teachers and ERIE consultants who gave first rank position to this task, ERIE program coordinators ranked the task at 10.5, on the border-line between "average importance" and "least important."

Task 2: Assist teachers in construction and utilization of materials used in program provided in kit

Group responses on this task are distinguished by the Rank of Median scores of 3 and 2, within the 1-5 "most important" range, given by the teachers and the ERIE consultants. Other groups ranked this task in the "average importance" range.

Task 3: Assist teachers in location and purchase of additional materials needed in program and not included in kits

Considerable discrepancy between the teachers and teacher-leaders is seen on Task 3. While the teacher group gave this task a ranking of 5, the other groups viewed this task much lower in priority. The teacher-leaders ranked this item in the "least important" category.

Task 4: Assist in the evaluation of individual pupil learnings

All groups showed a median rank on this item between 11 and 14, placing the item firmly in the "least important" class.

Task 5: Assist teachers with the organizational arrangements needed to install more effectively the curriculum, e.g., grouping of pupils within the classroom

Some discrepancy exists in the responses on this item between the in-school respondent (teachers, teacher-leadders, and administrators) and the external agency (ERIE consultants

and ERIE program coordinators). The in-school personnel viewed this task as falling in the "average importance" range, whereas the external agency groups considered this task "most important" for the teacher-leader to perform.

Task 6: Assist teachers to secure and select pertinent audio-visual materials to enhance the curriculum materials

This item was generally viewed as being of "average importance" (teachers, teacher-leaders, and ERIE program coordinators). The administrator and ERIE consultant groups ranked this task lower in the "least important" range.

Task 7: Provide orientation for new instructional staff in the use of the innovative curriculum

Task 7 is the only item among the 15 which all groups ranked as being "most important." Both teacher-leader and administrator groups gave a median score of 1.0 to this task.

Task 8: Teach demonstration lessons for regular classroom teachers

While school administrators (2.5) and ERIE program coordinators (3.0) perceived this task as ranking in the "most important" category, respectively, teachers, teacher-leaders, and ERIE consultants ranked this item lower in the "average importance" range.

Task 9: Provide leadership for inservice workshops, and/or conferences, for persons (from own or other school district) interested in the innovative curriculum

Considerable discrepant views are evident in the group responses to Task 9. School administrators alone clearly ranked this item in the "most important" category. The teachers (median rank of 6) and teacher-leaders (median rank of 9.5) viewed this task as of average importance. The ERIE consultants and program coordinators saw this task as a much lower priority, scoring it in the "least important" category.

Task 10: Provide time for intervisitations by taking over regular classroom teacher's responsibilities so this teacher may visit other classes (in or outside own school district) to observe innovative curriculum being taught

Discrepant views of Task 10 are evident. ERIE program coordinators viewed this item as falling among the five "most important" with a median rank of 5.0--a result in sharp contrast to the teacher-leader group which ranked the item as "least important" among 15 tasks. The teachers, school administrators, and ERIE consultants concur with the teacher-leaders that this task is among the five "least important."

Task 11: Foster improved school-community relations through such endeavors as speaking at PTA, getting information on curriculum to mass media resources, etc.

Mildly differing viewpoints were scored on Task 11. Considered to be of "average importance" to the school

administrators (8.0) and ERIE consultants (9.0), this task was ranked lower by other groups in the "least important" range.

Task 12: Provide feedback to sponsoring agencies on problems arising with use of curriculum

Differences on Task 12 are evident between responses of the in-school groups (teachers, teacher-leaders, and school administrators) and the external agency groups (ERIE consultants, ERIE program coordinators). In-school groups perceived this task as "most important;" ERIE groups scored it lower in the "least important" range.

Task 13: Evaluate instructional performance of teachers working with innovative curriculum

This task was viewed by all groups as falling in the "least important" task category. With the exception of teacher-leaders (13.5), all groups placed this item as the very least important task (15.0).

Task 14: Serve as the "sounding board" for teachers wishing to express positive or negative comments on innovative curriculum

While there was general agreement on the realative importance of Task 14, some differences are suggested in the data. ERIE consultants and teacher-leaders ranked this item just within the "most important" task category with rankings of 4.5 and 5.0, respectively. All others saw the task of lesser importance. ERIE program coordinators and teachers both perceived this item as having average

importance, and school administrators saw the task as being in the "least important" category with a median rank of 10.5.

Task 15: Observe classroom teachers using innovative curriculum and provide counsel

Responses on Task 15 showed the widest variation in rank between the two teacher groups. In contrast to teachers who ranked this task at 11.0 (least important), the teacher-leaders gave the same task a median rank of 2.5, indicating a "most important" task. ERIE program coordinators concurred with the teacher-leaders by ranking this task as "most important" at 1.5. School administrators and ERIE consultants saw the task as "average importance" with a rank of 6.0.

Table 2 presents a correlation matrix indicating the degree of relationship between the ranking of items among the five groups. Several correlations are singled out for discussion with an effort to identify the tasks which contribute to either the high or the low value. These should represent either agreements (high correlation) or disagreements (low correlation) on role expectations.

TABLE 2

CORRELATION MATRIX:
SPEARMAN RHO CORRELATIONS ON RANKS OF MEDIANS

	Teacher-Leaders	Prin. & Adm.	ERIE Consultants	ERIE Program Coordinators
Teachers	.676	.638	.486	.242
Teacher-Leaders		.724	.536	.475
Prin. & Adm.			.409	.412
ERIE Consultants				.667

The matrix above indicates a fair degree of correlation in the ranking of the 15 teacher-leader tasks by the three groups of in-school personnel--teachers, teacher-leaders, and administrators. Likewise, the correlation between the two groups comprising the external agency, ERIE consultants and ERIE program coordinators, is high. Lower correlations are seen when these two institutional groups are mixed.

The largest correlation (.724) is found between the teacher-leaders and the school administrators. Correlations between the teachers and teacher-leaders (.676) and between the teachers and administrators (.638) seem to indicate that the role expectancies of the teacher-leader is viewed with a great deal of similarity by all school personnel. These high correlations should indicate general colleague support for the teacher-leader in the performance of her role tasks.

The external agency, represented by ERIE, was essential in the initial establishment of the innovative program, Science--A Process Approach, within the schools. The perspective of the teacher-leader's role does not seem to be the same from the external agency as from the school. Tasks 5 and 12 show such a dichotomy in perspective.

The correlations between the ERIE consultants and teachers and also between the ERIE consultants and teacher-leaders suggest that the consultant serves a mediating position between the school and the change agency. This relationship is an essential one in any effort by an external agency to initiate an innovative program and, more important, to establish a strategy whereby the innovation will continue in the school once the external agency has left the scene. By making the teacher-leader role viable, the external agency is able to develop a mechanism for weaning the school from external support, while at the same time developing change expertise within the school.

PILOT SCHOOL UTILIZATION OF TEACHER-LEADERS

Information concerning the utilization of ERIE-trained teacher-leaders in pilot schools using Science--A Process Approach in 1968-69 was gathered through the observations of ERIE consultants, a questionnaire completed by each participant, a formal presentation of her experience given by each teacher-leader during a follow-up meeting in February, 1969, and facts brought out in informal discussion at that meeting; one teacher was interviewed at length to provide an in-depth case study. The data thus gathered showed that there is no consensus on the function of the teacher-leader; the duties required and the time allotted to perform them varied drastically from school to school.

General Comments on Utilization

The most crucial variable concerning the teacher-leader's ability to function effectively was the time allowed her to act as a teacher-leader; without adequate time to do what she wants and has been trained to do, the teacher-leader finds only frustration and a lack of accomplishment. For example, despite the fact that their administrators had agreed to provide five hours of released time each week for ERIE trainees to act as resource personnel, three participants were given no time at all; this effectively precluded any real assistance from them to the teachers in their schools. These teacher-leaders

used whatever time they could find--music periods, grade meetings, after school sessions--trying to perform the functions required of them; this was not satisfactory to them or to other teachers. On the other hand, one teacher-leader was allowed a full day each week to assist and counsel other staff members; she became a most effective individual, and served her faculty well.

Three of the teacher-leaders served as elementary science consultants to several schools within their own districts. This was not the intent of the original concept of teacher-leader which assumes that the individual will be within the building as a teaching colleague. One of these participants did maintain her teaching duties, and was released three afternoons a week. The other two, in effect, became elementary science coordinators. It seems essential that the school districts involved realize the scope of the individual's competence. Specialized training in one innovation does not make a teacher an expert in a larger area of concern. In this example, training of a classroom teacher in Science--A Process Approach does not in itself create an elementary science consultant. The conversion of the teacher-leader (peer) to a science supervisor (semi-administrator) jeopardizes the working relationships a classroom teacher can have with her peers. Such distortion of the teacher-leader's role must be avoided.

The teachers who were granted sufficient time to function performed many similar tasks; that most frequently mentioned was assistance with materials. Since the very nature of Science--A Process Approach demands a wide variety of materials for the children to manipulate, this finding is hardly surprising. It concurs with what ERIE consultants perceive to be a real need of the practioner who asks such questions as, "What is it?" "How do you put it together?" "What can I do with it?" "Where can I get it?" "Can you get it for me?" A further aspect of the materials problem is the task of unpacking and distributing of materials; this was handled by many teacher-leaders.

Most of the teacher-leaders did demonstration teaching. Those with released time worked with their colleagues. Two of the three teachers without released time did quite a bit of demonstrating for outside personnel--possibly aiding the dissemination of Science--A Process Approach, but not its installation in their own schools.

Observation and counselling were also used by the teacher-leaders. This seems to have been very informal and non-evaluative. Its only purpose was to assist other teachers. However, only one teacher-leader reported using this technique extensively.

Teacher-leaders were able to answer questions from their colleagues concerning the written materials of the new curriculum. Their expertise, stemming from their own interest and ERIE instruction, made each of them a very helpful resource for less well-informed colleagues. This was an outstandingly successful aspect of the program.

Some teacher-leaders tested individual pupils to measure the success of Science--A Process Approach. They collected and kept records which opened many doors to fruitful dialog and professional communication. Other classroom teachers, seeing that the new program produced results, were encouraged to continue and expand their own efforts.

Teacher-leaders were frequently asked to assist in some manner with inservice programs either in their local or nearby school districts. Almost all addressed interested groups such as PTA meetings, Title III staffs, or civic clubs. Most have been or will be concerned with the orientation of new teachers to the innovative curriculum; this work ranges from informal conferences with new teachers and student teachers to conducting a two-day workshop.

These general findings show the diversity of services required of these teacher-leaders. The most important problems emerged in schools where the administrator used teacher-leaders in roles for which they were not trained and did not allow time for teacher-leaders to perform their proper functions. The ERIE staff was disturbed by the limitations placed upon many of their trainees and felt that many tasks they had to perform diverted their efforts from the proposed goal--serving as local peer agents of change. ERIE believes, however, that this pioneering exploratory effort provided much information and many insights into the role and function of teacher-leaders and the problems involved in their use in schools.

What One Teacher-Leader Can Do--A Case Study

Mrs. D. was not selected to be seen as a "typical" teacher-leader in ERIE's program--rather, she is representative of what might potentially occur, given the right individual and the proper set of circumstances.

The school system in which Mrs. D. worked was in the midst of changes involving buildings and administration. During 1967-68, ERIE's first year of installation, this school system operated four small elementary schools.

ERIE had installed Science--A Process Approach in one of these schools in which Mrs. D. was a kindergarten teacher. In the fall of 1968, when Mrs. D. assumed her role as teacher-leader, all elementary schools in the system were incorporated into one large new building. Approximately half the K-4 teachers were new to the science curriculum, not having been at the pilot school the year before. All of these teachers were ERIE-trained during the summer of 1968, but were inexperienced in terms of actually having taught the program or manipulated the instruction equipment.

There was also a shift in administration. The same individuals were present, but positions within the hierarchy shifted as a result of the centralization. The man who had been principal of the pilot school was now the assistant principal of the centralized school. However, each person in the administration supported the innovation. This was made clearly known; many classes were visited by the principal and the assistant principal.

The architecture of the building was open. Classrooms, with the exception of the kindergarten rooms which formed their own wing, faced the out of doors. The opposite side of each room opened, without walls, onto a corridor. The entire school was carpeted, and the noise level was

exceedingly low. The wall between every two classrooms was a sliding partition. The openness of the architecture was reflected in the communication among the staff. Some of the isolation between teachers seemed to have been effectively broken down; the "egg carton" syndrome of the elementary school world was challenged.

It was in this setting that Mrs. D. took up her role. She was given one full day a week in which to perform the duties of teacher-leader. Mrs. D.'s kindergarten class met for a full day (as opposed to two groups, each meeting for a half day). A regular substitute was hired to take the class one day each week--a most satisfactory arrangement. Mrs. D. and the regular substitute coordinated the program so as to insure a continuous program for the children.

Although a very competent and dedicated professional, Mrs. D. is shy and unassuming. Some of the leadership roles were extremely difficult for her because of her shyness. However, her enthusiasm and commitment were sufficiently strong to overcome any reluctance she might have felt in pursuing her new role. Previously, in ERIE's first year of installing Science--A Process Approach, Mrs. D.

successfully completed the kindergarten program, so she had a great strength in this one aspect of the curriculum. She was very receptive to the training period provided in the three-week workshop.

Mrs. D.'s released time was left unstructured by the administration, and she made excellent use of it. Perhaps her greatest contribution was assisting with the many materials used in the curriculum. She anticipated needs, and had materials arranged in the fall so that teaching could begin immediately. For example, aquaria are used by Grade 1 and Grade 2 classes for exercises very early in the fall; their absence has often been a source of delay (a problem typical of curriculum innovation). The need to postpone an exercise due to material shortcomings can often lead to a general procrastination about teaching any of the innovative exercises. However, thanks to Mrs. D.'s efforts, the teachers were able to begin on schedule. The equipment for Grade 4 did not arrive until January. Mrs. D., working with the Grade 4 teachers, prepared substitute materials so that teaching went on during the fall, instead of being delayed until January. The decline in teacher morale as one waits months for materials is a serious impediment to the installation of new curricula. Mrs. D. met this problem effectively.

She was able to substitute existing materials, explain their uses, and find additional materials to make the program go.

In addition, Mrs. D. did a great deal of interpretation of written materials at the kindergarten, Grade 1 and Grade 2 levels. She was, in actuality, the consultant at these grade levels, and it was the opinion of the ERIE consultant that it was unnecessary for him to provide any assistance here. However, at the Grade 3 and Grade 4 levels, Mrs. D.'s influence, except in the area of materials, was negligible. It is difficult to assess whether it was her lack of familiarity with the program, or reluctance for these teachers to call upon a "kindergarten" teacher that accounts for this. Although Mrs. D. undoubtedly brought greater strength to the early primary materials, it seems likely that her broad view would have been an asset to the Grade 3 and Grade 4 teachers. One conjectures whether a Grade 4 teacher-leader would have felt the same hesitancy and experienced the same lack of demand for her services at the early primary level. It may well be that the grade designation of the teacher-leader determines which teachers will recognize her expertise and seek her assistance.

Mrs. D. did some demonstration teaching--particularly teaming with the ERIE consultant to provide assistance to one teacher who was having difficulty with the program. She did not, however, formally observe and evaluate teacher performance; she did not feel that it was her place to do so. On several occasions, Mrs. D. took over a class so that teachers from the school might observe one another or work professionally on their own.

This teacher-leader collected the competency-measures, the evaluations of individual children on particular exercises. She organized the materials, which were in the form of punched data cards, and scanned them for obvious mistakes. This information was to be used by ERIE to aid in the evaluation of its program. However, it is conceivable that school systems might be gathering such data for their own uses in the near future. Such a service would be extremely valuable but to handle it requires a knowledge of the curriculum. It would be difficult to have a clerk perform a similar task.

Mrs. D. did a great deal of public speaking; although this was difficult for her, she did an excellent job. She made presentations at a Title III meeting, as well as participating in several ERIE institutes for college professors. Visitors from all over New England were scheduled

into her school system--there was a dual interest in the new building and the innovative science program. Mrs. D. arranged for and conducted many of these meetings. She did not hesitate to call ERIE for help that she could not provide. She used all the resources at her command. When a teacher asked a question she was unable to answer, if there was no urgency about it, she wrote it down. When the consultant arrived, she would find from him the answer for her own information. The consultant would then discuss the matter with her and the teachers concerned. This shows her real awareness of the ever-constant need for professional self-growth.

The teachers in this particular school made more progress in the teaching of Science--A Process Approach than in any other school in the ERIE study. More exercises were taught. Attitudes were favorable. Interest was high. It is not possible to infer a necessary cause and effect relationship between the contributions of this teacher-leader and the success of the installation in this school system. However, the presence and the work of this individual seems to have been one prominent factor. Without Mrs. D., for example, the teachers here would have only had the services of a consultant one day every three weeks. One wonders what the differences in instruction would have been without her assistance.

Mrs. D. expresses deep professional satisfaction with the year's work. It was a profound and rewarding experience for her, and she plans to serve as teacher-leader again next year. During the summer of 1969, she was employed as a consultant in a large Science--A Process Approach workshop for New York State teachers. She and her colleagues refer to Science--A Process Approach as "our school's science program," not as "ERIE's science program."

CONCLUSIONS AND SUGGESTIONS

The description of an educational concept on paper and its execution in the actualities of everyday practice in the schools are two different matters. However, an examination of "what happens" in the schools can be of assistance in reshaping approaches and planning to implement an educationally sound concept. It is anticipated that the experiences of 1968-69 will benefit ERIE in its next undertaking of this nature. Further, the staff of ERIE feels that the generalizations presented below should be considered by any external agent looking to train local teaching personnel to be peer agents of change.

Generalization 1: Time

It is essential that time be made available to teacher-leaders in order for them to meet their responsibilities. All of the school administrators involved in the ERIE program made an initial commitment; several, however, under the pressures of the school year, did not follow through. It was apparent to the consultants that without time, the teacher-leader could not function. The frustration expressed by the teacher-leaders in such a situation was tremendous.

Generalization 2: Evaluation

It is important that the external agent use its own personnel to gather needed data, as opposed to utilizing the teacher-leader. Such a plan might be made to coordinate with the initial period of on-the-job training where the external agent works with the teacher-leader and provides the appropriate backup. In fact, the responsibility of an external change agent to carefully describe, quality-control, and evaluate a curriculum innovation probably militates against the use of the teacher-leader as the sole source of data. Most external change agents are obligated to observe the program in the classroom and to assess the achievement of pupils through accepted research procedures. These research-type obligations loom as role conflicts for the teacher-leader. Perhaps the teacher-leader is fully developed only after a year or two of external consultant service, when she then remains to nurture the innovation after the consultant and his agency are gone. ERIE's experience suggests that the external agent which begins a major curriculum installation using only teacher-leaders to assess achievement will find itself hard pressed to describe or certify what is actually happening in the schools.

Generalization 3: Withdrawl of Outside Help

The teacher-leaders relied a great deal on the expertize of the ERIE consultants and the availability of

information from them. However, most of the teacher-leaders felt that after several years of working, backed up by the consultant, they could function quite successfully alone. It might be appropriate to consider what regular educational agencies are already functioning which might serve as resources after the external agent has withdrawn. Knowledge of such resources should be made available to the personnel in the local school system.

Generalization 4: Local Change Agents

In the training of the local teaching personnel as peer change agents, it appears advisable to stress the generalizable competencies which might be useful if this same individual were to assist in the institutionalization of a different innovation. Such competencies might stem from areas of study similar to the following, included by ERIE in training teacher-leaders: the teacher-leader concept, change in education, process education, behavioral objectives, teacher behavior, etc. However, ERIE staff has observed that those who experienced the training requested more specific familiarity with the actual exercises; specific rather than generalizable competencies were their chief concern. To provide this familiarity, at least a year's experience teaching the curriculum prior to any teacher-leader training seems to be an absolute necessity.

Generalization 5: On-The-Spot Help

Clearly, a compromise between the two elements, generalizable theory and specific information related to the particular innovation, is essential. It is suggested that the question of generalizability be raised and the objectives of that part of the training be made clear. It is further suggested that while trainees are given experiences which insure their familiarity with anticipated problem areas, appropriate expectations might be developed for handling the countless specific details which must be analyzed "on the spot."

Generalization 6: Continued Professional Growth

The question of on-going professional growth must be considered. If change agents are not provided with opportunities to consider appropriate adaptions of and alternatives to the innovation, they will, in effect, be establishing a new status quo. Close cooperation between supervisory personnel and teacher-leaders in a local situation would not only help to assure integration of curriculum and instruction but would also provide a professional group with the competencies needed to continually analyze the state of the institutionalized innovation.

Generalization 7: Limited Expectations

Another concern of the external agent must be to clearly define what competencies a trained teacher-leader should have developed. It might be even more useful to

specify what competencies should not be assumed. For example, an individual trained to facilitate the use of Science--A Process Approach cannot, on that basis alone, be considered a science specialist. Administrators who themselves are not specialists in a particular area may fail to make this distinction. There is a danger that teacher-leaders may be placed in inappropriate situations.

Generalization 8: Released Time

There is an assumption in introducing a new curriculum that the administration is clearly supportive of the innovation and of the use of teacher-leaders. However, even if he has this favorable attitude, the administrator may need suggestions for organizational procedures which will allow him to authorize released time to the teacher-leader. The practicality of such planning may influence whether or not the teacher is provided the time to function as a teacher-leader.

Generalization 9: Concern for Continuity

Another concern is the continuity of program for the class of the teacher-leader when a substitute teacher is provided. Many teachers express concern regarding absences from their classes and will decline a teacher-leader position unless adequate provisions are made. The most successful patterns adopted by local schools in their utilization of the ERIE teacher-leaders provided that the same substitute teacher be hired for the entire time

and that planning be possible to insure an integrated educational experience for the children. Where this was done, no problems seemed to arise with teachers, pupils, or parents. These considerations are applicable to a traditional, one-class, one-teacher pattern. Where some of the newer patterns of individualization and staff differentiation are present, continuity of experience for the pupils would be no problem.

Generalization 10: Non-Evaluative Role

There seems to be general agreement that teacher-leaders should not evaluate their peer teachers. There is less agreement on whether or not they should observe their colleagues. This might be anticipated as a possible source of conflict, and decisions should be made in light of the specific local situation. Agreements reached in this area will probably determine the time in the installation sequence at which it is efficient for an external change agent to relinquish implementation concerns to the teacher-leader.

Generalization 11: Perception as a Resource

There is some indication that teacher-leaders from the primary grades were less effective when working with teachers of Grades 3 and 4. Teacher-leaders from Grades 3 and 4 seem to be equally effective at all levels. The number of cases is so small that it is difficult to even conjecture whether this shows a type of hierarchical

thinking among teachers; it may be merely the individuals involved. The possibility that intermediate grade teachers may not perceive a primary teacher as a resource person might be watched for in future programs. It seems essential that the teacher-leader be given support by the administrator and the external agent in front of the faculty. If the principal and consultant feel that an individual is competent, teachers will come to share this attitude and may value more highly this colleague's services.

Generalization 12: Commitment

All participants in ERIE's installation of Science--A Process Approach have unanimously identified the most important attribute of a teacher-leader as bringing enthusiasm, energy, and professional commitment to the task. Without this commitment, nothing is possible. With this commitment, the teacher-leader is providing the finest human resources to make education and schools what everyone wants them to be.

REFERENCES

1. Glen Heathers, "Influencing Change at the Elementary Level" in Perspectives on Educational Change, Richard I. Miller. New York: Appleton-Century-Crofts, 1967, pp. 21, 22.

2. John Goodlad, "The Educational Program to 1980 and Beyond" in Implications for Education of Prospective Changes in Society. Denver: Designing Education for the Future: an Eight-State Project, 1967, p. 50.

3. Richard O. Carlson, et al, Change Processes in the Public Schools. Eugene, Oregon: The Center for the Advanced Study of Educational Administration, 1965, p. 4.

4. Henry M. Brickell, Organizing New York State for Educational Change. Albany: The State Education Department, 1961, pp. 22,23.

5. Brickell, 1961, p. 24.

6. Ben M. Harris, "Strategies for Instructional Change: Promising Ideas and Perplexing Problems" in The Supervisor: Agent for Change in Teaching, James Raths. Washington, D.C.: Association for Supervision and Development, NEA, 1966, p. 93.

7. Brickell, 1961, p. 22.

8. Robert B. Howsam, "Effecting Needed Changes in Education" in Planning and Effecting Needed Changes in Education. Denver: Designing Education for the Future: an Eight-State Project, 1967, p. 72.

9. Howsam, 1967, p. 76.

10. Fenwick English, "Ailing Principalship" in Phi Delta Kappan, November 1968, p. 161.

11. Jacob W. Getzels, "Administration as a Social Process" in Administrative Theory in Education, Andrew Halpin. Chicago: Midwest Administration Center, 1958.